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Thin film or layer thickness measuring instrument esp. for outer silicon layer on semiconductor wafer - illuminates wafer surface with monochromatic light from filtered white light source with reflected light digitised for comparison with reference data (Eng)

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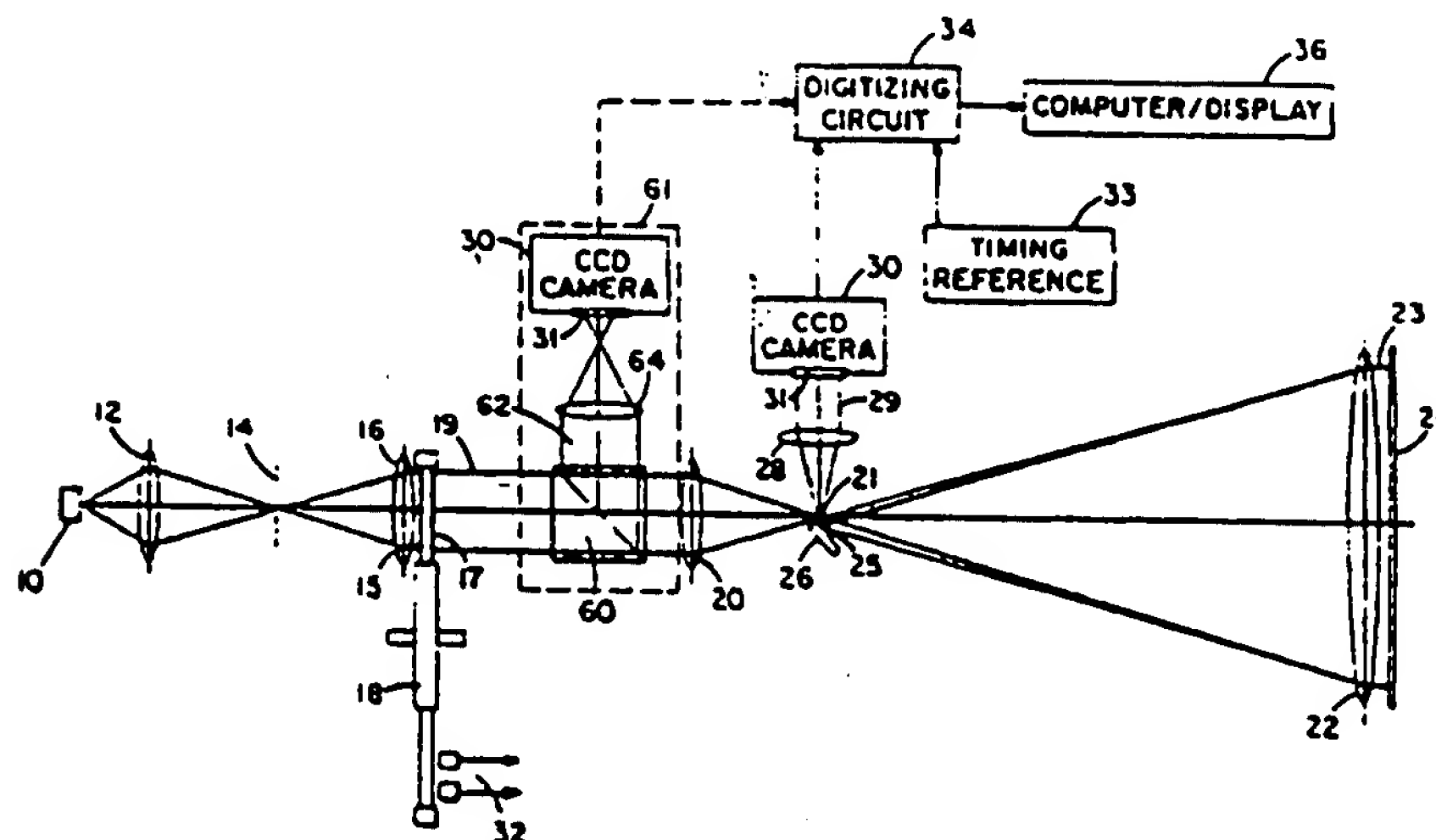
The instrument uses a filtered white light source forming an aperture image, with collimator lenses (16,20,22) to generate a monochromatic beam for illumination of the entire wafer (24) surface. Light reflected from the wafer, specifically from the thin film or layer front and rear surfaces, has thickness dependent characteristics.

The surface is sequentially irradiated with different wavelength monochromatic light to eliminate ambiguity due to the layer thickness being a multiple of the illumination wavelength. The returned aperture image is redirected to a CCD camera (30). The image is digitised, for conversion in a computer (36) to a map of measured reflectance data which is self-normalized and compared to reference data.

USE/ADVANTAGE - E.g. on silicon/silicon dioxide/silicon structures. Reduces number of measured images. (14pp Dwg.No.1/4)

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